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ECHINOCEREUS ANGUSTICEPS, A NEW SPECIES FROM THE LOWER RIO GRANDE VALLEY, TEXAS[1]

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Plate 327

ACCORDING to Britton and Rose, *Echinocereus papillosus* A. Lke. occurs in western Texas and supposedly also in the vicinity of San Antonio. For several years it has been known in the Lower Rio Grande Valley, Texas. The first collection, which was made by the author, was in 1926, when two specimens were found five miles north of Loma de la Cruz, near Rio Grande City, Starr Co., Texas. Recent collections (*Clover* 15255 and 548) have been made ten miles west of Edinburg, Hidalgo Co., Texas, where the plant is abundant in an area at least a mile square.

This range was extended during the course of mapping Starr County. Many specimens were found near Rucio, a ranch home about fourteen miles north of Rio Grande City, and from here the plants were numerous in the brush along the Hebbronville road southward for ten miles.

The soil here is light sandy loam with some red gravel and limestone on low hills. *Echinocereus papillosus* is found growing under the shelter of shrubs or large opuntias. These low hills are covered with typical chaparral in which *Acacia amentacea*, *Acacia Berlandieri* and *Leucophyllum texanum* predominate. *Prosopis juliflora* (the mesquite), *Condalia obovata* and *Bumelia angustifolia* are found in this association. Other cacti occurring with *Echinocereus papillosus* are *Coryphantha*

[1] Papers from the Department of Botany and Herbarium of the University of Michigan, No. 493.

Runyonii, Lophophora Williamsii, Ancistrocactus Scheeri and *Neomammilaria hemisphaerica.*

Within the last few years a type somewhat resembling *E. papillosus* has been found in a limited area near Linn, seventeen miles north of Edinburg, Hidalgo County. It is called "The small papillosus," by nurserymen in southern Texas. It seems to have been first discovered by Mrs. Troy Downs of Alamo, Texas.

The association in which it grows is quite different from that of the larger form, and the fact that the two never occur together has significance. The soil is light sandy loam to dark loam, and the vegetation consists of scattered mesquites and grass with *Zizyphus obtusifolia, Lippia ligustrina, Karwinskia Humboldtiana, Dolicothele sphaerica, Neomammillaria hemisphaerica, Hamatocactus setispinus* and *Jatropha spathulata.*

Although many of the species of this association are also found in the habitat of *Echinocereus papillosus*, the nature of the associations is not at all alike. The cactus near Linn grows in open places with less protection than the other form gets. It differs greatly in size and habit from its relative, as Plate 327, fig. 1 will show. Specimens under observation in the Michigan Botanical Gardens (nos. 547 and 548) have been given identical conditions for two years and still retain these characteristic differences. Environmental conditions in the field do not therefore appear to be responsible for the difference in habit and form.

Both species blossom during April and May in the greenhouse, probably earlier in the field, the flowers remaining open for two or three days.

According to reports of cactus growers *Echinocereus papillosus* is more difficult to grow than the other species, for the two appear to be specifically distinct. The chief characteristics of the two types compiled from notes on many specimens are shown below in parallel columns:

Characteristics	Echinocereus papillosus	Echinocereus angusticeps
Number of stems in clump	one to nine	five to ninety-five
Diameter of largest clump	thirteen inches (nine stems)	twelve inches (ninety-five stems)
Length of stem	fifteen to seventeen cm.	four to eight cm.
Diameter of stem	five to seven cm.	two to three cm.
Number of ribs	eight to nine	seven to eight
Number of spines on rib	radial, eight to ten; central, one	radial, seven to nine; central, one

Characteristics	Echinocereus papillosus	Echinocereus angusticeps
Flower color	sulfur-yellow segments; center, nopal to brazil red	same
Width of flower	seven to nine cm.	seven to nine cm.
Length of flower	nine to nine and six-tenths cm.	eight and five-tenths to nine cm.
Series of perianth-segments	four	five
Shape of segments	oblong-spatulate, acuminate	oblong-spatulate to ovate
Apex of segment	long-apiculate	short-apiculate to blunt
Serration of segments	finely erose	deeply erose to entire
Color along middle trace of outer perianth-segment	deep hellebore red	purple-drab

The differences justify the recognition of a new species, since there should be a definite name for a plant which is known by all local cactus enthusiasts as being distinct from the one already well known as *Echinocereus papillosus*.

Echinocereus angusticeps sp. nov. (TAB. 327, FIGS. 1, dextra, et 2) caespitosus, caulibus 6–95, decumbentibus vel erectis 4–8 cm. altis, 2–3 cm. crassis; costis 6–8 rectis summitate vix spiralibus, verticaliter sinuatis, modice altis, in tuberculas fere solutis; spinis lateralibus radiatim porrectis 7–9 acicularibus, albis vel luteis, centrali solitaria, succineo-alba; areolis 1–2 mm. latis, rotundis; florentibus rotundis, spinis albis, 4–13, longissimis 6 mm. longis; floribus magnis 8.5–9 cm. longis, 7–9 cm. latis, medio rubro alibi sulfureo-luteis; segmentis perianthii 5-seriatis, exterioribus medio atropurpureis, marginibus et apice luteis, stylo viridi, stigmatis lobis 10–12; filamentis numerosis, antheris luteis, fructibus viridescentibus. Specimen typicum vivum ex loco Texensi "Linn" dicto conservatum est in Horto Botanico Universitatis Michiganensis; siccatum sub numero 15261 in Herb. Univ. Mich., Ann Arbor, Michigan.

Echinocereus angusticeps n. sp. (PLATE 327, FIGS. 1, right, and 2) caespitose, stems procumbent to ascending, several to many, 4–8 cm. long, 2–3 cm. in diameter, ribs 6–8, prominent, definitely tuberculate; radial spines 7–9, white to yellow, porrect, acicular, upper ones in each group smaller, about 4 mm. long; central spine solitary, brown, acicular, erect, 7–8 mm. long; flowers showy, delicately fragrant; perianth-segments in five rows, segments 3–4 cm. long, 1.5–2 cm. wide, sulfur-yellow, nopal to brazil red at center, the outer ones purple-drab on the outside along the middle trace, oblong-spatulate to ovate, short-apiculate to blunt, erose; scales on ovary purple-drab[1] to reddish, spines on ovary 4–13, longest 6 mm. long, white; width of flowers 7–9 cm., length of flower 8.5–9 cm., stamens cream-colored, shorter than the pistil, stigma-lobes 10–12; fruit greenish.

[1] Colors according to "Color Standards and Nomenclature," Ridgeway,

Distribution: known only from open mesquite woods, Linn, Hidalgo County, Texas (type locality).

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Explanation of Plate 327

Fig. 1. Echinocereus papillosus A. Lke. (Mich. Bot. Gard. No. 15255, left); Echinocereus angusticeps Clover (Mich. Bot. Gard. No. 15261, right) showing differences in size and habit.

Fig. 2. Echinocereus angusticeps Clover (Mich. Bot. Gard. No. 15261).

NOTES ON THE FLORA OF WORCESTER COUNTY, MASSACHUSETTS

David Potter and Norman P. Woodward

In the list of "The Herbaria of New England" compiled in 1901 by the late Mary A. Day[1] no herbaria are listed from Worcester County. During the years which have elapsed since the above article appeared much active botanical work has been accomplished in and about Worcester, which has resulted in the appearance of at least four small herbaria. The smallest of these is that of the late Joseph Jackson, author of "The Flora of Worcester County."[2] After the death of Mr. Jackson his herbarium became the property of Miss Ethel L. Rider, a teacher in the North High School of Worcester, Massachusetts, and is there housed. The senior author has recently examined this collection and found it to contain 713 named species and varieties, with practically no duplication. In addition there are about 30 sheets of unnamed specimens. These plants, collected between the years 1878 and 1885, are in white paper folders and for the most part unmounted. 517 of the above noted 713 plants were collected in Millbury, Massachusetts. Mr. Jackson states in the preface to his first edition that he at first planned to write only a flora of Millbury, but finally expanded it to include the whole county. This first edition contained 810 species and well marked varieties. The second edition lists 1098, while the third increased the count to 1240. A supplement to this work, by Norman P. Woodward[3] was published in 1927 adding some 421 plants new to the county, thus making the total number of species reported 1661.

[1] Day, Mary A. The Herbaria of New England. Rhodora, **3**: 67–71, 206–208, 219–222, 240–244, 255–262, 281–283, 285–288.

[2] Jackson, Joseph. Flora of Worcester County, Massachusetts. Worcester Natural History Society, 1883. 2d edition, 1894, 3d edition, 1909.

[3] Additions to Flora of Worcester County. Edited by Norman P. Woodward. Worcester Natural History Society, 1927.